



**Australian Government**

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**Department of Communications,  
Information Technology and the Arts**

21 December 2006

The Committee Secretary  
Standing Committee on Economics, Finance and Public Administration  
Department of the House of Representatives  
Parliament House  
CANBERRA ACT 2600

Dear Committee

**Inquiry into the current and future directions of Australia's service industries**

Attached is a submission by the Department of Communications, Information Technology and the Arts to the House of Representatives Standing Committee on Economics, Finance and Public Administration.

The submission is in relation to its current inquiry into the current and future directions of Australia's service industries. A copy has also been emailed to you.

The Department has no objection to the Committee publishing the Submission on its website.

Yours sincerely

Dr Beverly Hart  
Chief General Manager  
Strategic Development and Regional Division



**Australian Government**

**Department of Communications,  
Information Technology and the Arts**

**Submission to the House of Representatives Standing Committee on  
Economics, Finance and Public Administration's Inquiry into the  
Current and Future Directions of Australia's Service Industries**

**THE ROLE OF THE DEPARTMENT OF COMMUNICATIONS,  
INFORMATION TECHNOLOGY AND THE ARTS**

The Department of Communications, Information Technology and the Arts (DCITA) administers programs, provides policy advice and works with other agencies to ensure strong growth in the information and communications technology (ICT) sector and the information economy more broadly in Australia.

ICT has significant intersections with Australia's services sector. Not only are many ICT activities and products services in their own right, but ICT also serves as a critical enabler for other service industries such as the finance, education and tourism sectors. Informed use of ICT by Australia's service industries in combination with appropriate Government policy settings will act to boost Australia's productivity and export performance.

**AUSTRALIA'S ICT SECTOR**

**What is ICT?**

ICT is the group of technologies that capture, transmit and display data and information electronically. The discrete ICT sector includes the telecommunications, electronics, computer hardware and computer software industries. However this is only part of the picture. Research commissioned by DCITA indicates that substantial investment in, and production of, ICT occurs in other industries, such as business and legal services and household goods retailing.<sup>1</sup> Thus, the distinction between the vertical or sectorally defined aspect of ICT and its horizontal application across other industries is becoming increasingly blurred. ICT policies therefore extend beyond the mere targeting of an identified sector and now emphasise building Australian ICT capability in general.

ICT impacts on the communities in which we live and the way individuals, business and government interact and develop. It can play a role in building stronger communities, increasing economic productivity and contributing to rural and regional rejuvenation.

In recent years, investment in ICT across the economy has enhanced Australia's economic performance. ICT investment has acted as a catalyst for business innovation, including organisational transformation and the development of new

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<sup>1</sup> 2005 ICT Production in Australian SMEs, a Sensis® Business Index Special Report: see [http://www.dcita.gov.au/ict/ict\\_industry\\_information/ict\\_production\\_in\\_australian\\_smes](http://www.dcita.gov.au/ict/ict_industry_information/ict_production_in_australian_smes)

business models and services. ICT, as a general purpose technology, is embedded in most government, business and consumer activities. It is also a critical enabler for Australia's research effort.

### **ICT and the services sector**

Australia's economy is becoming more globalised, with many labour intensive activities moved offshore. This is manifested in changes to our industry base, which is moving further down the value chain, towards more ICT intensive service activities such as logistics, business planning and customer service and support.

For example, declines in manufacturing as a percentage of gross domestic product, or GDP (from 20 percent in 1977-78 to 12.8 percent in 2000-01) have been matched by corresponding increases in service industries (from 70.4 percent of GDP in 1977-78 to 78.5 percent of GDP in 2000-01).

At the same time Australia's economy is growing strongly. The usual view is that our strong economic growth over the past decade can largely be attributed to our ongoing micro-economic reform agenda. However, a further dimension to our economic growth is the positive contribution of investment in ICT to the performance of all sectors of our economy.

The 2005 DCITA research report, *Productivity Growth in Service Industries*<sup>2</sup>, suggests that:

- technological factors, including ICT, have contributed up to 78 percent of productivity growth for the services sector between 1984-85 and 2001-02, and
- high-technology and capital-intensive industries realised the majority of the benefits.

This is supported by recent research undertaken by the Organisation for Economic Co-operation and Development (OECD), which shows that investment in ICT has contributed more to GDP growth in Australia than any other member nation, including the United States, Japan and major European countries.

Advances in ICT are in many cases the only technological factors that can be identified as significant contributors to productivity growth in service industries. This applies to the bulk of service industries examined in the DCITA research, including wholesale and retail trade, finance and insurance, telecommunications and cultural/recreational services. Only a minority of the service industries studied benefited in recent years from significant technological advances outside ICT. These include transport, electricity and water supply. Even non-ICT innovations often occurred in conjunction with new ICT applications.<sup>3</sup>

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<sup>2</sup> *Productivity Growth in Service Industries*, Occasional Economic Paper, Commonwealth of Australia, Canberra, 2005. These papers are available on the DCITA website: [www.dcita.gov.au](http://www.dcita.gov.au).

<sup>3</sup> *Productivity Growth in Service Industries*, Occasional Economic Paper, Commonwealth of Australia, Canberra, 2005, pp. 18-19.

For example, ICT now permits many services to be performed without the need for personal contact between customers and suppliers; for example, internet banking. This is an expansion of the idea of a service which is no longer restricted to person-to-person contact.

Moreover, embedded ICT provides opportunities for companies to collect and use information as a way of marketing the service value of a product to new customers – rather than simply merchandising a tangible object. The competitive advantage provided by ICT intensive products is not the ICT *per se*, but the information attributes, properties and customised service offerings that the ICT enables, and which are embodied in the product. In other words, clever use and incorporation of ICT becomes a differentiator.<sup>4</sup>

### **ICT as a service**

While ICT is an important factor in improving productivity across the breadth of Australia’s service industries, it is also a significant service industry in its own right.

According to the Australian Bureau of Statistics (ABS),<sup>5</sup> in 2002-03, about 24,000 ICT specialist firms in Australia generated income of \$79.9 billion. The large majority of these firms were in the computer services sector (77 percent), with wholesale trade comprising the second largest share of ICT specialist firms (eight percent).

There were 235,696 persons employed in ICT specialist businesses at the end of June 2003. Of these persons, 107,686 (46 percent) were classed as ICT employees. As ICT is often embedded in the goods and services of many other industries, these figures do not include ICT manufactured by other sectors for their own products.

The ICT industry in Australia has also undergone substantial growth in recent times, as illustrated in the following table.<sup>6</sup>

Year	Number of ICT specialty businesses	Income Generated by ICT specialist business	Persons employed in ICT specialist businesses
2002/03	24 000	\$79.9 billion	235 696
2000/01	22 475	\$77.5 billion	238 521
1998/99	18 072	\$62.6 billion	199 341

<sup>4</sup> *Digital Factories: The Hidden Revolution in Australian Manufacturing*, Dr John Howard, September 2005 section 4.3.

<sup>5</sup> ABS, Information and Communication Technology Australia 2002-03, CAT 8126.0.

<sup>6</sup> ABS, Information and Communication Technology Australia 2002-03, CAT 8126.0. It should be noted however that there have been changes made to the ICT industries survey since it was last conducted. For a further discussion of methodological issues related to these statistics, see the source publication.

Many ICT products that might be considered goods are actually information services. As the Productivity Commission's 2002 report *Australia's Service Sector: A Study in Diversity* finds, "information based services are ... becoming increasingly transferable — software programs, for instance, can be boxed and stored."<sup>7</sup>

### *Digital content*

The digital content industry has been identified as a key emerging service industry by the Australian Government, with strong linkages to ICT and the emergence of other innovative technical platforms spanning radio, broadband, 3G mobiles and digital television. The final report of the Digital Content Industry Action Agenda<sup>8</sup> was released by Senator the Hon Helen Coonan, Minister for Communications, Information Technology and the Arts, and the Hon Ian Macfarlane MP, Minister for Industry, Tourism and Resources, on 13 March 2006. The report found that production of digital content will be one of the major drivers of Australia's economic competitiveness in the coming decade, and will make a major contribution to ensuring high levels of economic growth, a robust export capacity and a highly skilled workforce.

The report found that the digital content industry is important because:

- it is economically significant, with estimated worth of \$21 billion, almost 3.5 percent of Australia's GDP, and employs about 300,000 people,
- it is a high-growth industry, growing faster worldwide than other economic sectors,
- the economic multipliers arising from the digital content industry are significant, being higher than for most other categories of economic activity, and
- it has major implications for productivity growth in many important industries beyond the core digital content industry itself: digital content and technology are becoming an important input to other industries and an enabler which helps transform the way they do business.

Australia's digital content industry comprises three sectors: core production (41 percent), embedded production (50 percent) and distribution (nine percent).

The *core production* sector of the industry involves the creation of digital content by firms and individuals in the creative industries.

However, the industry also includes the creation of digital content, using creative skills, within the wider professional service industries (that is, *embedded production*). Examples include the creation of web pages and advertising material in-house by a law firm or an educational institution, the production of training programs using games technology in the defence sector, or the use of visualisation data in mining or architecture.

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<sup>7</sup> *Australia's Service Sector: A Study in Diversity*, R McLachlan, C Clark and I Monday, Productivity Commission, 2002.

<sup>8</sup> *Unlocking the Potential*, Digital Content Industry Action Agenda Strategic Industry Leaders Group report to the Australian Government, November 2005.

Finally, a large amount of digital content activity occurs in the key area of *distribution*, where value is added by circulating, transmitting or exhibiting digital content.

The industry is significant, both in its own right, and for its impact in wider industries. While it is characterised by a plethora of micro-firms and sectors, there is a need to achieve critical mass to maximise its potential impact.

The report recognises linkages between the digital content industry and the services industry through collaboration with the Services Industry Roundtable, an umbrella body representing the services sector in Australia. The Roundtable provided representation on the Action Agenda's Strategic Industry Leaders Group.

The Digital Content Industry Action Agenda's Strategic Industry Leaders Group identified six key issues to be addressed in order to maximise the potential of the industry:

1. stimulating market interest in investment,
2. confronting the challenge of international competition,
3. rectifying disadvantage created by the historically based analogue/digital distinction,
4. recognising digital content as a general purpose technology for the 21st century,
5. filling skills gaps in a leading edge industry, and
6. building a total industry from a fragmented base.

The findings and recommendations of the report have been profiled at national forums in June and July 2006. Industry is now progressing the report's implementation plan, which focuses on four key recommendations in investment, exports, skills and training, and research and development.

The digital content industry's commitment to take action itself provides a good platform for the Australian Government to develop a broader Digital Content Strategy. The ultimate aim is to generate the growth within the Australian digital content industry which will provide opportunities across the entertainment, health and education sectors, and deliver high quality Australian digital content products and services to the world. Collaboration between the Government and the industry on implementation is ongoing.

### *Software*

Australia's software capability consists of the specific software industry, and the many diverse industry segments capable of producing their own in-house software to complement or enhance their core products. Software is strategically important to the competitiveness and sustainability of all Australian industries, the development of new goods and services with enhanced functionality, and the cost effective delivery of health, education and government services.

Furthermore, software production is highly diverse, both in terms of the markets in which it operates and its geographical location.

The Australia's software capability is at an exciting stage of its development. It includes both well-established and mature globally competitive companies, as well as new and emerging start-ups. It is strongly export-focused, and has a deserved reputation for quality. While it is an integral part of the global ICT industry, it has the capacity to stand on its own feet and compete internationally.<sup>9</sup>

#### *Australian software production*

The Centre for Innovative Industry Economic Research (CIIER) estimates that in 2004–05, the Australian software product industry employed around 17,000 staff, supported by nearly 7,000 development staff, and earned \$2.7 billion, of which \$830 million went to Australian developers. International markets accounted for \$290 million of this revenue, with \$226 million going back to the software developers. The industry spends \$66 million a year on research and development.

The computer software and services sector includes a large number of small firms. In June 2003, no less than 97 percent had fewer than 20 employees and 99.6 percent had fewer than 100. Nevertheless, a relatively small number of larger firms dominate most markets, of which the majority are foreign-based multinationals. There are, however, also a few relatively large indigenous software firms.<sup>10</sup>

#### **Australia's ICT export performance**

The ABS reports that during 2004-05, Australian ICT goods and services exports were valued at \$4.3 billion, comprising ICT goods exports of \$2.2 billion and ICT services of \$2.1 billion.<sup>11</sup>

Australian and international firms are increasingly providing ICT “offshoring” services to other economies. Australia is ranked highly as a destination for investment in value-added ICT operations because we have highly skilled, multilingual workers, world class ICT infrastructure and an attractive low-risk business environment. In 2004-05, 51 offshore companies announced investments of more than \$750 million in ICT operations in Australia, which are forecast to generate about 1,750 local jobs.<sup>12</sup>

Australia's ICT related services exports accounted for around six percent of total services exports in 2005. Computer and information services were the largest and fastest growing category, although 2005 exports were five percent down on 2004. Australia's ICT related services imports cost \$3 billion in 2005. They accounted for around eight percent of all services imports. Computer and information services accounted for 34 percent, audiovisual services for 23 percent, communications

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<sup>9</sup> *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, Centre for Innovative Industry Economic Research Consortium, 2006.

<sup>10</sup> *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, Centre for Innovative Industry Economic Research Consortium, 2006.

<sup>11</sup> ABS publications 5368.0 and 5302.0

<sup>12</sup> Figures derived from research by Invest Australia: [www.investaustralia.gov.au](http://www.investaustralia.gov.au)

services for 22 percent, and software royalties and license fees for an estimated 21 percent.

There was a deficit on trade in ICT related services in 2005 of \$872 million – down significantly from the \$1.2 billion peak of 2001-2002. Computer and information services have been in surplus since 2002, and there has been a small surplus on trade in communication services during the last two years.<sup>13</sup>

## **GROWING AUSTRALIA'S ICT CAPABILITY**

The Australian Government's objectives for growing Australia's ICT capability are:

- to have a vibrant, competitive and internationally recognised ICT industry that can take advantage of international opportunities and make a greater contribution to economic growth, and
- to have globally competitive industries that make effective use of ICT.<sup>14</sup>

### **Enabling Australia's future: The F3 report**

In April 2003, the then Minister for Communications, Information Technology and the Arts, Senator the Hon Richard Alston, released the report of the Framework for the Future Steering Committee, titled *Enabling Our Future: A Framework for the information and communications technology industry*. The F3 report identified ICT "as a set of enabling technologies and related products and services which underpin the development of Australia as an 'information' or 'knowledge' economy." It found that, "many of the new business opportunities for Australian firms will depend on their capacity to develop new ICT-based products and services which respond to the expanding role of ICT across the economy and society." The report was developed to provide a guide for the key elements that are necessary to support the longer term development of the ICT industry and national ICT capability.

The report recommended maintaining, and in some cases strengthening, policy settings to provide a long-term consistency of approach to developing Australia's ICT capability, improved coordination of ICT-related initiatives and better integration of ICT into the national research infrastructure. It highlighted the need for sustained Government and industry leadership to build the profile of ICT in Australia by emphasising its role in achieving national objectives such as productivity and economic growth.

Building innovative firms was a key focus as well as skills development, and attracting and retaining foreign investment. The report also highlighted the need for priority attention to communications infrastructure and associated standards development to overcome impediments to both research and commercial use of advanced networks.

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<sup>13</sup> *Australian ICT Trade Update 2006*, John Houghton, Centre for Strategic Economic Studies, March 2006.

<sup>14</sup> *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, Centre for Innovative Industry Economic Research Consortium, 2006, p. 9.



DCITA is engaged in an ongoing effort with industry, the research and education community and other government agencies to implement the recommendations of the F3 report.

## **The Importance of Broadband**

Increasingly, broadband connectivity is recognised by governments around the world as an enabler of major improvements in economic and social wellbeing. Widespread, high-speed communications access can deliver significant increases in GDP, expand employment, increase international competitiveness and improve quality of life.

Accelerating the adoption and effective use of broadband across Australia will improve our international competitiveness, including by connecting us with key international markets and facilitating exports. The widespread diffusion of broadband technologies has the potential to revolutionise the way services are delivered in a range of sectors including health, education and research.

### *Broadband and Service industries*

Investment in broadband is a necessary pre-condition to boosting Australian online service exports. Internationally competitive broadband capabilities will allow Australian service providers to connect with potential customers in key target markets and provide services that compete effectively with firms located in European, North Asian and North American markets.

The importance of broadband in enabling service exports was recognised in the Broadband Advisory Group's 2003 report to the Australian Government, *Australia's Broadband Connectivity*<sup>15</sup>, which identified the ability of broadband to eliminate the tyranny of distance allowing Australia's export-capable small to medium-sized enterprises (SMEs) to reach customers across the nation and much of the world. Accordingly the Broadband Advisory Group recommended that the Government adopt a national strategy to ensure that Australia becomes a world leader in the availability and effective use of broadband.

The result was Australia's National Broadband Strategy which was released in March 2004. Developed collaboratively between the Australian Government, State and Territory governments and local government, the purpose of the National Broadband Strategy is to coordinate activities across government and to provide a holistic approach to broadband development in Australia, with a view to achieving long-term strategic outcomes, such as enhanced ICT service exports.

### *The Broadband Blueprint*

Released on 7 December 2006, the Broadband Blueprint will build on the National Broadband Strategy by providing a national framework that positions the rollout of next generation broadband infrastructure and services for Australia by governments and by the private sector.

In order to establish this framework the Blueprint gives an overview of the Australian Broadband Market, as well as detailing past and present initiatives to encourage

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<sup>15</sup> *Australia's Broadband Connectivity*, Broadband Advisory Group, 2003, pp. 1-2, p. 32.

broadband implemented by the Australian Government. It provides a brief overview of the activities of state, territory and local governments, and articulates the essential elements of the broadband market and a forward strategy to encourage their development.

To ensure that the roll out of next generation broadband is coordinated across all jurisdictions the Australian Government has invited all tiers of government to participate in the development of an implementation plan for next generation broadband infrastructure.

An electronic copy of the Broadband Blueprint is available on the DCITA website at [www.dcita.gov.au](http://www.dcita.gov.au)

### Broadband Programs

Under the National Broadband Strategy, the Australian Government implemented a number of activities, including the following programs:

- the Higher Bandwidth Incentive Scheme (HiBIS), which provided registered Internet service providers with incentive payments to supply higher bandwidth services in regional, rural and remote areas at prices comparable to those available in metropolitan areas,
- the Coordinated Communications Infrastructure Fund (CCIF), which funds broadband infrastructure projects that improve the delivery of health, education and government services in regional communities, and
- the Demand Aggregation Broker Program, which aims to build awareness of broadband and its benefits, and to coordinate demand for broadband services at the regional and sectoral level to encourage investment in broadband infrastructure and the delivery of services.

On 17 August 2005, the Australian Government announced a \$1.1 billion communications package for regional access to telecommunications services. Connect Australia will rollout improved broadband to people living in regional, rural and remote areas, extend mobile phone coverage, build new regional communications networks and set up vital telecommunications services for remote Indigenous communities.

Two programs in this package are specifically focused on broadband:

- Broadband Connect is an \$878 million program to give regional Australians access to affordable broadband services over the next four years. It expands on the \$158 million Higher Bandwidth Incentive Scheme to provide subsidies to Internet providers to connect homes, small businesses and not-for-profit organisations to fast, reliable and affordable broadband services. Broadband Connect promotes competition and helps roll out a range of broadband platforms and services, including ADSL, cable, wireless and satellite. The scale of the program recognises the increasing demand for affordable and reliable broadband services and the fact that national broadband penetration rates are increasing rapidly.

- The \$113 million Clever Networks Program supports the development and rollout of new broadband infrastructure, networks and innovative applications to improve health, education and other essential services delivery in regional, rural and remote areas.

### **Effect of ICT on productivity in Australian service industries**

ICT is making a significant contribution to productivity growth, innovation and export development in Australian service industries. ICT systems are increasingly embedded in well-established industry sectors like finance and insurance, government service delivery, health and education. It is enabling the emergence of new flexible working relationships, flatter organisational structures, networked organisations, virtual organisations, and new business models.

ICT is also improving our capacity for research and creating a virtuous circle of sustained innovation. It is empowering consumers and citizens by giving them more diverse sources of information and knowledge.

The DCITA report, *Achieving Value From ICT: Key management strategies* (2005)<sup>16</sup>, found that effective use of ICT in an organisation can not only raise efficiency, but can also:

- improve the quality of the information available to decision-makers in the organisation,
- generate a competitive or strategic advantage, such as access to a new export market, and
- lead to positive change within an organisation, such as a new management structure, or entirely new lines of business.

Not only is ICT enabling transformational change in firms, it is leading the creation of new industries and professions, such as remote helpdesk companies, and ICT project management specialists. ICT is also driving workplace reforms including teleworking, which has the potential to revitalise regional centres by reversing the flow of skilled workers to major cities and urban areas. ICT specialists are capable of working across industry boundaries to transform operations for example in the education, banking, and finance sectors.

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<sup>16</sup> *Achieving Value From ICT: Key management strategies*, DCITA, April 2005, p. 11.

## **THEMES**

### **Theme 1: ICT and the tourism and research sectors**

#### *The Australian tourism sector*

The Cooperative Research Centre for Sustainable Tourism's 2000 report *Meeting the Challenge*<sup>17</sup> recognised that online technologies will play an increasingly significant role in the distribution of the Australian tourism product. It suggested that impediments to using online technologies were being overcome, and that the Australian industry needed to be prepared to operate in an environment where business partners, government agencies and consumers expect accurate, timely and comprehensive access to information, and the capacity to immediately act on the basis of that information.

*Meeting the Challenge* proposed four key principles for developing online strategies for the tourism industry, as follows:

1. Ensure that use of online technologies in the tourism industry contributes to the global tourism development objectives of: selling Australia better; a more competitive Australia; and Australia – being better prepared.
2. Encourage tourism businesses, especially small and medium tourism enterprises in all sectors to participate in the online economy at a sustainable rate of uptake.
3. Ensure that the Australian tourism industry and its global partners have access to the highest quality information for making decisions about online initiatives.
4. Ensure that the opportunities presented by online tourism are accessible to regional and rural tourism enterprises.

An example of a successful Australian company utilising ICT in the tourism services sector is Wotif.com, which launched in Brisbane in March 2000, and now has offices in Canada, Malaysia, New Zealand, Singapore and the United Kingdom. Wotif.com won the Australian Information Industry Association (AIIA) iAward for Overall Excellence for innovating the accommodation industry with a web service.

For suppliers and the tourism industry, Wotif.com is an Internet distribution channel where room rates, allocations, types and property descriptions can be readily updated by simply logging into the Wotif.com supplier site. Once updated, this information is instantly available to the public. Suppliers are also provided with facilities to view their property's performance statistics, booking history and the guest list of customers that are due to check in to their premises.

#### *The Australian research sector*

The Australian Government uses the term 'e-Research' to describe the transformational impact of ICT on research activity. It reflects Australia's evolving capacity for large-scale, distributed, global collaboration in research, providing a new

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<sup>17</sup> *Meeting the Challenge: National Online Tourism Scoping Study*, Pramod Sharma, Dean Carson, IT Program, CRC for Sustainable Tourism, 2000.

level of scope, scale and detail. This transformation is being made possible by the more effective use of ICT by Australian researchers.

While e-Research is a relatively new concept, it is starting to underpin all research disciplines, including the humanities and social sciences. It encapsulates research activities that use a spectrum of advanced ICT capabilities and embraces new research methodologies emerging from increasing access to:

- broadband communications networks, research instruments and facilities, sensor networks and data repositories,
- software and infrastructure services that enable secure connectivity and interoperability, and
- application tools that encompass discipline-specific tools and interaction tools.

Developing e-Research capabilities serve to advance and augment, rather than replace traditional research methodologies, but there is already a growing dependence on the new e-Research capabilities. Improved access to knowledge and information will enable researchers to perform their research more creatively, efficiently and collaboratively across long distances and disseminate their research outcomes. Using e-Research, researchers can work seamlessly from desk-to-desk within and between organisations.

A related initiative is the National Collaborative Research Infrastructure Strategy (NCRIS), which was an element of the Government's *Backing Australia's Ability* package. The objective of NCRIS is to provide Australian researchers with major research facilities, supporting infrastructure and networks necessary for world-class research. NCRIS has four expert subcommittees structured around the National Research Priorities: Environmentally Sustainable Australia, Promoting and Maintaining Good Health, Frontier Technologies and Safeguarding Australia.

## **Theme 2: The impact of the resources boom on the service sector**

The development of the mineral resources sector in Australia owes a considerable amount to ICT investment. But the new ICT services generated by this investment have not only contributed to mineral exports, but have also resulted in specialised mining ICT services for export markets.

In April 2006, the Minister for Communications, Information Technology and the Arts released the report *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, the first statistical analysis of Australian software firms. The report analyses the Australian software industry and opportunities for growth in eight key vertical markets, including mining. It finds that the segment of the ICT industry that is vertically integrated with the mining sector provides products and services to areas including management and administration, exploration, geological survey and mapping, telemetry and mine and facility planning.<sup>18</sup>

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<sup>18</sup> *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, Centre for Innovative Industry Economic Research Consortium, 2006, p. 205.

Australia is known for its success in mining software, with a number of established developers. This success has been due, in part, to Australia's strength in the mining industry, with leading international players in the industry and a strong support industry (such as mining engineering, logistics, exploration, and so on). As a consequence, Australia reportedly provides 87 percent of the world's specialised mining industry software.<sup>19</sup>

A 2003 DCITA research report, *The Australian Mining and ICT Industries: Productivity and industry growth*, found that Australian ICT providers to the mining industry do not develop export businesses for the purpose of serving Australian mining clients overseas. Rather, they proactively develop international business opportunities within their particular ICT specialisation.

The report also found that Australian ICT providers obtain some leverage from the reputation of Australian mining in overseas markets, and that Australian mining ICT has a range of growth opportunities over the next five years, mostly associated with product innovation and development for both Australian and overseas markets. In technology terms, the opportunities include the deployment of systems integration technologies, the web enablement of applications, and the enrichment and quality improvement of graphical interfaces through 3D and other capabilities delivered over broadband communications systems.<sup>20</sup>

### **Theme 3: Future global opportunities for Australian service exports**

The liberalisation of bilateral trading markets, including processes like the Australia-United States Free Trade Agreement (AUSFTA) has the potential to open up new export opportunities to the Australian services sector. Service exports to the United States have been expanding in any case, with a 45 percent increase between 1997-98 and 2002-03.<sup>21</sup>

Agreements such as the AUSFTA assist Australian ICT service providers in accessing important foreign procurement markets such as the \$60 billion US Government IT procurement market. The AUSFTA also provides a mechanism for regular consultation with US policy makers on telecommunications market access issues. The agreement also ensures that there are no barriers to trade conducted electronically and that digital products are not subjected to customs duties. To help Australian exporters maximise the opportunities offered by the free trade agreements with the US, Singapore and Thailand, the Government has committed \$20 million to a range of initiatives, including an ICT-specific export forum.

Globalisation will increase opportunities for Australian ICT service providers. The ongoing development of global supply chains will provide significant opportunities for Australian ICT suppliers whose products are capable of easy amalgamation into final products or networked solutions. This process will be assisted by the increasing use of broadband Internet connectivity including the development of online ordering

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<sup>19</sup> *The Australian software industry & vertical applications markets: globally competitive, domestically undervalued*, Centre for Innovative Industry Economic Research Consortium, 2006, p. 208.

<sup>20</sup> *The Australian Mining and ICT Industries: Productivity and industry growth*, DCITA 2003, pp. 5-6.

<sup>21</sup> *Economic analysis of AUSFTA Impact of the bilateral free trade agreement with the United States*, Centre for International Economics, April 2004, p. 7.

systems. Australian service providers will need to be able to adapt their systems to take account of this new wave of globalisation.

Specialist strengths offered by Australian suppliers include bioinformatics, ICT-based games, and health and education applications. For example Australia has developed world leading capabilities in ICT-based distance education services such as those offered by the University of Southern Queensland, the inaugural winner of the International Council for Open and Distance Education prize for institutional excellence for its expertise in providing flexible learning opportunities around the world.<sup>22</sup>

Increasing Government investment in ICT research and development (R&D) in combination with a renewed emphasis on commercialisation opportunities will also boost Australia's capacity to contribute to new and emerging supply chains. The Government has recently committed an additional \$250 million towards ICT research by National ICT Australia (see below), and is undertaking important ICT procurement reforms to maximise commercial opportunities for Australia ICT suppliers.

#### **Theme 4: Policies for realising these opportunities**

##### *Policy framework*

In its 2004 IT election policy statement the Government committed itself to "determine key priorities for our ICT researchers and industry to serve as a focus for our development". The ICT priority setting process will build on the F3 framework and involve consultation with key stakeholders, including businesses, the research sector and State and Territory Governments.

As a first step in the consultation process the Government established an ICT Advisory Board as an additional source of advice for identifying priorities and other issues. The Board will work with the Government on the implementation of the election commitment.

##### *Developing Australian ICT solutions and businesses*

The Government has a range of programmes and policies in place to assist Australian ICT firms to develop, commercialise and export ICT.

##### National ICT Australia (NICTA)

In 2002, the Australian Government selected NICTA<sup>23</sup> to establish and operate an enduring, world-class, world-scale ICT research and research training institute. The purpose of NICTA is to lift Australia's ability to generate breakthrough technologies, grow ICT businesses and spur the development of Australian industries creating jobs and wealth.

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<sup>22</sup> [www.icde.org](http://www.icde.org)

<sup>23</sup> [www.nicta.com.au](http://www.nicta.com.au)

NICTA conducts research, provides research training, commercialises research and collaborates with private sector research organisations, major companies, SMEs and public sector agencies.

NICTA is one of Australia's largest ICT research organisations and when fully established in 2006-07 will have about 250 research staff and over 200 postgraduate students. The creation of NICTA is building critical mass in Australia's ICT research effort and growing our international profile as a strong performer in ICT research and research training.

NICTA was initially funded with \$129.5 million over five years (from 2001-2006) under the Australian Government's innovation action plan - *Backing Australia's Ability*. In 2004, a further funding commitment of \$251 million over five years (from 2006-2011) was provided through the Australian Government's companion science and innovation plan *Backing Australia's Ability - Building Our Future Through Science and Innovation*.<sup>24</sup>

NICTA funding is jointly administered by DCITA and the Australian Research Council.<sup>25</sup>

### ICT Incubators

The ICT Incubators program provides incubation services, such as seed capital, business advice and assistance with raising follow-on capital, to start-up ICT companies with the intent of accelerating their growth.

Ten ICT incubators in all mainland states and territories were funded in 1999-2000 under the Building on IT Strengths (BITS) Incubator Program. An eleventh incubator in Tasmania was funded under the BITS Intelligent Island Program. The total allocated to all eleven BITS incubators was \$86 million over four years.

On 6 May 2004 the Government announced additional funding of \$36 million for four years from 2004-05 to 2007-08 for eight ICT incubators, as part of the Government's *Backing Australia's Ability - Building Our Future through Science and Innovation* package.<sup>26</sup>

### *Assisting Australian ICT SMEs to export*

A range of initiatives and programs supporting venture capital investment are provided by agencies such as AusTrade and AusIndustry, including the Commercialising Emerging Technologies (COMET) program, the Venture Capital Limited Partnerships program, the Innovation Investment Fund, the Small Business Incubator program, the Export Market Development grants program, the New Exporter Development Program and the Australian Technology Showcase program.

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<sup>24</sup> [www.backingaus.innovation.gov.au](http://www.backingaus.innovation.gov.au)

<sup>25</sup> [www.arc.gov.au](http://www.arc.gov.au)

<sup>26</sup> See [www.dcita.gov.au/ict/ict\\_incubators](http://www.dcita.gov.au/ict/ict_incubators) under the link to "Backing Australia's Ability - Building Our Future through Science and Innovation".



For example COMET has been successful in helping SMEs to gain the commercialisation skills required to bring innovative ideas and products to markets and in bridging the funding gap in smaller scale capital raising. In addition the Export Market Development Grants Programme has provided over \$116.5 million to assist ICT SMEs into export markets.

Many Australian information industry SMEs rely significantly upon Australian Government work as a means of demonstrating their credentials and experience. This enables them to break into markets in Australia and overseas. To further assist ICT SMEs the Government is engaging in important procurement reforms that will reduce costs for ICT tenderers and allow intellectual property (IP) to be transferred to industry for commercialisation. These reforms include the production of a Government IP Better Practice Manual incorporating revised IT IP Guidelines, a new guide on capping liability in government contracts, and a revised General Information Technology and Communications contracting framework.